Complying with Data Interoperability Standards in MyCOAST Project

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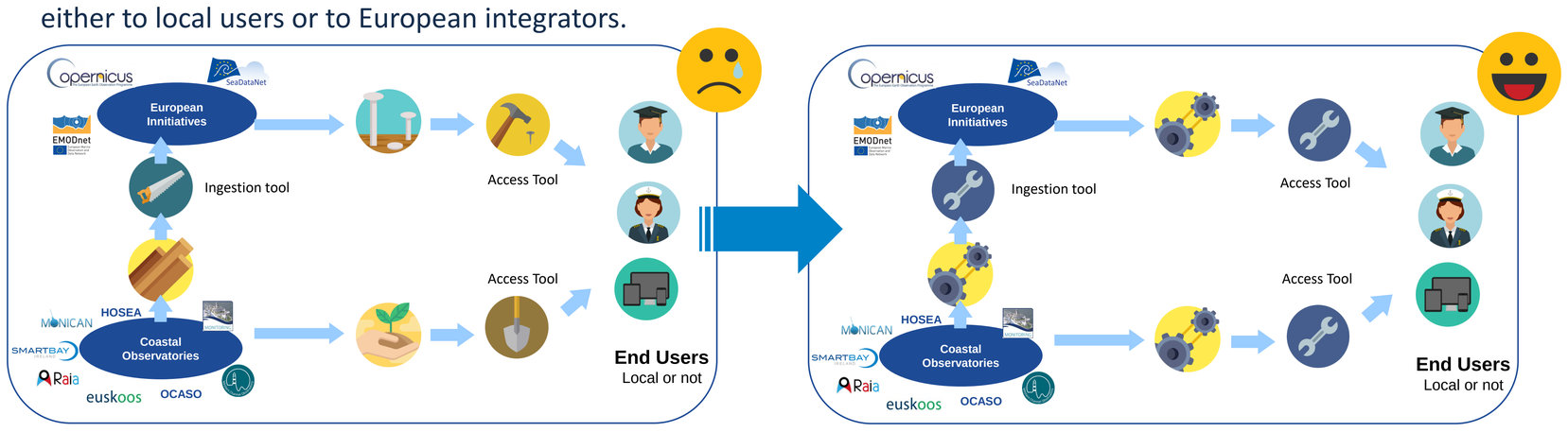
MyCOAST Project Goal: To build a coordinated Atlantic Coastal Operational Observatory in the Atlantic area joining capabilities from five countries (France, Ireland, Portugal, Spain and UK) and from existing coastal observatories and cross-border activities: RAIA, LOREA, the Western Channel Observatory, SmartBay, HOSEA, SCObs, OCASO and the upcoming Metropolitan Lisbon Area Observatory, all targeted towards the improvement of coastal monitoring and forecasting tools to support threat and emergency response.

CHALLENGES:

Existing coastal observatories are providing several datasets (observations and model outputs) for both local users and European integrators initiatives (SeaDataNet, Copernicus, EMODnet). MyCOAST challenge is to foster local observatories to use European common standards for QA/QC, formats, cataloguess and services to disseminate data in the same way, either to local users or to European integrators.



MyCOAST strategy involves:

- To use common formats and quality standards from the local one facilitating the work of the ingestors.
- To facilitate the exchange of data as well as the intercomparison among observatories.
- To use similar tools by observatories and other European initiatives to access and exploit the data.

KEY POINTS:

- Use existed standards. *Not reinventing the wheel.*
- Choose some types of datasets to standardize. *Not trying to do them all at once.*
- Encourage the use of same standards by coastal observatories.
- Create or adopt guidelines, tools, scripts and software. *To respond both local users and European initiatives.*

STEPS for each chosen type of dataset:

1. Review the state of standardization of our datasets, but also services, procedures, gaps, flow of data, international initiatives.
2. Low level standardization: THREDDS-NetCDF-CF, OGC-INSPIRE Services (WMS, SOS, Catalogue, etc.)
3. High level standardization: Data Reference Syntax, (DRS), common vocabularies, quality standards, federation of catalogues, etc.
4. Adopt/complete/write guidelines, software, scripts to transform/use these standards.

CHOSEN DATASETS IN THE FIRST LOOP

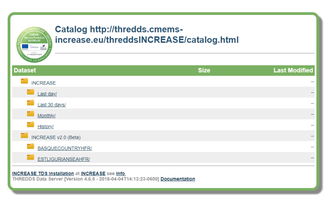
HF RADAR: European Standard for HF Radar current data: radial and total data

Developed by:
- EuroGOOS HFRadar TaskTeam
- JERICO-NEXT
- INCREASE

Contributions:
- EMODnet Physics
- In Situ TAC - CMEMS
- SeaDataNet

Standards supported:
- NetCDF v4 classic
- CF 1.6
- OceanSITES 1.2
- ISO08601
- Unidata ACDD
- INSPIRE metadata
- SeaDataNet P09 (SDN)

Service:
- Unidata THREDDS Catalogue
- DRS: CMEMS-INSTAC folders and names



European common data and metadata model Reference Card (by Corgnati et al.)

https://presentations.copernicus.org/EGU2018-13317_presentation.pdf

Tools for transforming native data into the standard:

EU_HFR_NODE_Matlab_Processing Tool

Matlab Tool developed by Lorenzo Cognati (ISMAR-CNR)

https://github.com/LorenzoCorgnati/HFR_Node_tools

Jradar

Java Tool developed by J.L. Asensio (AZTI)

https://github.com/llasensio/JRadar

AZTI Workcamp hold on october 2018, Bilbao (assisted 63% of European Operators)

Fixed Platforms:

Developed by:
- In Situ TAC – CMEMS

Contirbutions:
- EuroGOOS DATAMEQ WG
- EuroGOOS Tide Gauges TT

Interactions
- SeaDataNet
- EMODnet

Standards supported:
- NetCDF v4 classic
- CF 1.6
- OceanSITES 1.2
- INSPIRE metadata
- SeaDataNet P09

Service:
- DRS: In Situ TAC – CMEMS folders and names
- http://www.marineinsitu.eu/
- FTP
- THREDDS for Local Observartories
- Oceanotron: OpenDAP, WMS, SOS

CTD profiles

Developed by:
- SeaDataNet
- Copernicus-CMEMS In Situ TAC

Standards supported:
- NetCDF v4 classic
- CF 1.6
- SeaDataNet
- OceanSITES 1.2
- INSPIRE metadata

Service:
- DRS: CMEMS-INSTAC folders and names
- Unidata THREDDS Catalogue for NetCDF files (SeaDataNet & OceanSITES compliant)
- GeoNetWork CSW using CSR & CDI Metadata

FUTURE WORK:

- Foster the use of these standards by MyCOAST partners and coastal observatories.
- Create or adopt guidelines to use these standards.
- Adopt and develop tools to transform, ingest and disseminate data in these standards.
- Incorporate new types of dataset: Models, trajectories, etc.

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